

HS

SEQUENCE LISTING

<110> OKAMOTO, Hiroshi

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<140> US 10/009,178

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<151> 2000-06-09

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Leu Asp Leu Cys Arg Ile Arg Glu Ser Val Ser Glu Glu Leu Leu Gln	
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Lys Ile Glu Ala Cys Lys Lys Ser Ile Glu Asn Ala Lys Gln Asp Leu  
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				325					330					335	
Val	Lys	Arg	Lys	Tyr	Leu	Phe	Thr	Phe	Gln	Gly	Glu	Lys	Ile	Glu	Ser
			340					345					350		
Leu	Arg	Ser	Ser	Leu	Gln	Glu	Ala	Arg	Ser	Phe	Glu	Glu	Glu	Met	Glu
		355					360					365			
Gly	Asp	Pro	Pro	Ala	Asp	Tyr	Asp	Asp	Arg	Ile	Ile	Ala	Thr	Leu	Lys
	370					375					380				
Ala	Val	Gln	Asp	Ser	Lys	Leu	Asp	Gln	Val	Leu	Val	Glu	Phe	Thr	Cys
385					390					395					400
Lys	Asn	Gln	Pro	Lys	Pro	Ser	Leu	Pro	Thr	Glu	Trp	Ala	Leu	Cys	Gly
				405					410					415	
Glu	Arg	Glu	Asp	Arg	Leu	Glu	Leu	Leu	Lys	Leu	Ser	Thr	Phe	Ala	Leu
			420					425					430		

Ile	Ile	Thr	Pro	Gly	Asp	Pro	Ser	Leu	Leu	Ile	Ser	Ser	Gly	Cys	Ala	
		435					440					445				
Thr	Arg	Leu	Phe	Glu	Ala	Leu	Glu	Val	Gly	Ala	Val	Pro	Val	Val	Leu	
	450					455					460					
Gly	Glu	Gln	Val	Gln	Leu	Pro	Tyr	His	Asp	Met	Leu	Gln	Trp	Asn	Glu	
465					470					475					480	
Ala	Ala	Leu	Val	Val	Pro	Lys	Pro	Arg	Val	Thr	Glu	Val	His	Phe	Leu	
				485					490					495		
Leu	Arg	Ser	Leu	Ser	Asp	Ser	Asp	Leu	Leu	Ala	Met	Arg	Arg	Gln	Gly	
			500					505					510			
Arg	Phe	Leu	Trp	Glu	Thr	Tyr	Phe	Ser	Thr	Ala	Asp	Ser	Ile	Phe	Asn	
	515						520					525				
Thr	Val	Leu	Ala	Met	Ile	Arg	Thr	Arg	Ile	Gln	Ile	Pro	Ala	Ala	Pro	
	530					535					540					
Ile	Arg	Glu	Glu	Val	Ala	Ala	Glu	Ile	Pro	His	Arg	Ser	Gly	Lys	Ala	
545					550					555					560	
Ala	Gly	Thr	Asp	Pro	Asn	Met	Ala	Asp	Asn	Gly	Asp	Leu	Asp	Leu	Gly	
				565					570					575		
Pro	Val	Glu	Thr	Glu	Pro	Pro	Tyr	Ala	Ser	Pro	Lys	Tyr	Leu	Arg	Asn	
			580					585					590			
Phe	Thr	Leu	Thr	Val	Thr	Asp	Cys	Tyr	Arg	Ser	Trp	Asn	Ser	Ala	Pro	
		595					600					605				
Gly	Pro	Phe	His	Leu	Phe	Pro	His	Thr	Pro	Phe	Asp	Pro	Val	Leu	Pro	
	610					615					620					
Ser	Glu	Ala	Lys	Phe	Leu	Gly	Ser	Gly	Thr	Gly	Phe	Arg	Pro	Ile	Gly	
625					630					635					640	
Gly	Gly	Ala	Gly	Gly	Ser	Gly	Lys	Glu	Phe	Gln	Ala	Ala	Leu	Gly	Gly	
				645				650						655		
Asn	Val	Gln	Arg	Glu	Gln	Phe	Thr	Val	Val	Met	Leu	Thr	Tyr	Glu	Arg	
			660					665					670			
Glu	Glu	Val	Leu	Met	Asn	Ser	Leu	Glu	Arg	Leu	Asn	Gly	Leu	Pro	Tyr	
		675					680					685				
Leu	Asn	Lys	Val	Val	Val	Val	Trp	Asn	Ser	Pro	Lys	Leu	Pro	Ser	Glu	
	690					695					700					
Asp	Leu	Leu	Trp	Pro	Asp	Ile	Gly	Val	Pro	Ile	Met	Val	Val	Arg	Thr	
705					710					715					720	
Glu	Lys	Asn	Ser	Leu	Asn	Asn	Arg	Phe	Leu	Pro	Trp	Asn	Glu	Ile	Glu	
				725					730					735		

Thr Glu Ala Ile Leu Ser Ile Asp Asp Asp Ala His Leu Arg His Asp  
740 745 750

Glu Ile Met Phe Gly Phe Arg Val Trp Arg Glu Ala Arg Asp Arg Ile  
755 760 765

Val Gly Phe Pro Gly Arg Tyr His Ala Trp Asp Ile Pro His Gln Ser  
770 775 780

Trp Leu Tyr Asn Ser Asn Tyr Ser Cys Glu Leu Ser Met Val Leu Thr  
785 790 795 800

Gly Ala Ala Phe Phe His Lys Tyr Tyr Ala Tyr Leu Tyr Ser Tyr Val  
805 810 815

Met Pro Gln Ala Ile Arg Asp Met Val Asp Glu Tyr Ile Asn Cys Glu  
820 825 830

Asp Ile Ala Met Asn Phe Leu Val Ser His Ile Thr Arg Lys Pro Pro  
835 840 845

Ile Lys Val Thr Ser Arg Trp Thr Phe Arg Cys Pro Gly Cys Pro Gln  
850 855 860

Ala Leu Ser His Asp Asp Ser His Phe His Glu Arg His Lys Cys Ile  
865 870 875 880

Asn Phe Phe Val Lys Val Tyr Gly Tyr Met Pro Leu Leu Tyr Thr Gln  
885 890 895

Phe Arg Val Asp Ser Val Leu Phe Lys Thr Arg Leu Pro His Asp Lys  
900 905 910

Thr Lys Cys Phe Lys Phe Ile  
915

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<213> Homo sapiens

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Gln Thr Cys Met Leu Arg Trp Ser Asn Arg Ile Arg Leu Thr Trp Leu  
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Ser Phe Thr Leu Phe Val Ile Leu Val Phe Phe Pro Leu Ile Ala His  
35 40 45

Tyr Tyr Leu Thr Thr Leu Asp Glu Ala Asp Glu Ala Gly Lys Arg Ile  
50 55 60

Phe Gly Pro Arg Val Gly Asn Glu Leu Cys Glu Val Lys His Val Leu  
65 70 75 80

Asp Leu Cys Arg Ile Arg Glu Ser Val Ser Glu Glu Leu Leu Gln Leu  
 85 90 95  
 Glu Ala Lys Arg Gln Glu Leu Asn Ser Glu Ile Ala Lys Leu Asn Leu  
 100 105 110  
 Lys Ile Glu Ala Cys Lys Lys Ser Ile Glu Asn Ala Lys Gln Asp Leu  
 115 120 125  
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 130 135 140  
 Leu Met Ala Gln Asn Gln Pro Lys Leu Ser Leu Pro Ile Arg Leu Leu  
 145 150 155 160  
 Pro Glu Lys Asp Asp Ala Gly Leu Pro Pro Pro Lys Ala Thr Arg Gly  
 165 170 175  
 Cys Arg Leu His Asn Cys Phe Asp Tyr Ser Arg Cys Pro Leu Thr Ser  
 180 185 190  
 Gly Phe Pro Val Tyr Val Tyr Asp Ser Asp Gln Phe Val Phe Gly Ser  
 195 200 205  
 Tyr Leu Asp Pro Leu Val Lys Gln Ala Phe Gln Ala Thr Ala Arg Ala  
 210 215 220  
 Asn Val Tyr Val Thr Glu Asn Ala Asp Ile Ala Cys Leu Tyr Val Ile  
 225 230 235 240  
 Leu Val Gly Glu Met Gln Glu Pro Val Val Leu Arg Pro Ala Glu Leu  
 245 250 255  
 Glu Lys Gln Leu Tyr Ser Leu Pro His Trp Arg Thr Asp Gly His Asn  
 260 265 270  
 His Val Ile Ile Asn Leu Ser Arg Lys Ser Asp Thr Gln Asn Leu Leu  
 275 280 285  
 Tyr Asn Val Ser Thr Gly Arg Ala Met Val Ala Gln Ser Thr Phe Tyr  
 290 295 300  
 Thr Val Gln Tyr Arg Pro Gly Phe Asp Leu Val Val Ser Pro Leu Val  
 305 310 315 320  
 His Ala Met Ser Glu Pro Asn Phe Met Glu Ile Pro Pro Gln Val Pro  
 325 330 335  
 Val Lys Arg Lys Tyr Leu Phe Thr Phe Gln Gly Glu Lys Ile Glu Ser  
 340 345 350  
 Leu Arg Ser Ser Leu Gln Glu Ala Arg Ser Phe Glu Glu Glu Met Glu  
 355 360 365  
 Gly Asp Pro Pro Ala Asp Tyr Asp Asp Arg Ile Ile Ala Thr Leu Lys  
 370 375 380

205020" 846000T

Ala	Val	Gln	Asp	Ser	Lys	Leu	Asp	Gln	Val	Leu	Val	Glu	Phe	Thr	Cys	
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Lys	Asn	Gln	Pro	Lys	Pro	Ser	Leu	Pro	Thr	Glu	Trp	Ala	Leu	Cys	Gly	
				405					410					415		
Glu	Arg	Glu	Asp	Arg	Leu	Glu	Leu	Leu	Lys	Leu	Ser	Thr	Phe	Ala	Leu	
			420					425					430			
Ile	Ile	Thr	Pro	Gly	Asp	Pro	Arg	Leu	Val	Ile	Ser	Ser	Gly	Cys	Ala	
		435					440					445				
Thr	Arg	Leu	Phe	Glu	Ala	Leu	Glu	Val	Gly	Ala	Val	Pro	Val	Val	Leu	
	450					455					460					
Gly	Glu	Gln	Val	Gln	Leu	Pro	Tyr	Gln	Asp	Met	Leu	Gln	Trp	Asn	Glu	
465					470					475					480	
Ala	Ala	Leu	Val	Val	Pro	Lys	Pro	Arg	Val	Thr	Glu	Val	His	Phe	Leu	
				485					490					495		
Leu	Arg	Ser	Leu	Ser	Asp	Ser	Asp	Leu	Leu	Ala	Met	Arg	Arg	Gln	Gly	
		500						505					510			
Arg	Phe	Leu	Trp	Glu	Thr	Tyr	Phe	Ser	Thr	Ala	Asp	Ser	Ile	Phe	Asn	
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Thr	Val	Leu	Ala	Met	Ile	Arg	Thr	Arg	Ile	Gln	Ile	Pro	Ala	Ala	Pro	
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Ile	Arg	Glu	Glu	Ala	Ala	Ala	Glu	Ile	Pro	His	Arg	Ser	Gly	Lys	Ala	
545					550					555					560	
Ala	Gly	Thr	Asp	Pro	Asn	Met	Ala	Asp	Asn	Gly	Asp	Leu	Asp	Leu	Gly	
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Pro	Val	Glu	Thr	Glu	Pro	Pro	Tyr	Ala	Ser	Pro	Arg	Tyr	Leu	Arg	Asn	
			580					585					590			
Phe	Thr	Leu	Thr	Val	Thr	Asp	Phe	Tyr	Arg	Ser	Trp	Asn	Cys	Ala	Pro	
		595				600						605				
Gly	Pro	Phe	His	Leu	Phe	Pro	His	Thr	Pro	Phe	Asp	Pro	Val	Leu	Pro	
	610					615					620					
Ser	Glu	Ala	Lys	Phe	Leu	Gly	Ser	Gly	Thr	Gly	Phe	Arg	Pro	Ile	Gly	
625					630					635					640	
Gly	Gly	Ala	Gly	Gly	Ser	Gly	Lys	Glu	Phe	Gln	Ala	Ala	Leu	Gly	Gly	
				645					650					655		
Asn	Val	Pro	Arg	Glu	Gln	Phe	Thr	Val	Val	Met	Leu	Thr	Tyr	Glu	Arg	
			660					665					670			
Glu	Glu	Val	Leu	Met	Asn	Ser	Leu	Glu	Arg	Leu	Asn	Gly	Leu	Pro	Tyr	
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Leu Asn Lys Val Val Val Val Trp Asn Ser Pro Lys Leu Pro Ser Glu  
690 695 700

Asp Leu Leu Trp Pro Asp Ile Gly Val Pro Ile Met Val Val Arg Thr  
705 710 715 720

Glu Lys Asn Ser Leu Asn Asn Arg Phe Leu Pro Trp Asn Glu Ile Glu  
725 730 735

Thr Glu Ala Ile Leu Ser Ile Asp Asp Asp Ala His Leu Arg His Asp  
740 745 750

Glu Ile Met Phe Gly Phe Arg Val Trp Arg Glu Ala Arg Asp Arg Ile  
755 760 765

Val Gly Phe Pro Gly Arg Tyr His Ala Trp Asp Ile Pro His Gln Ser  
770 775 780

Trp Leu Tyr Asn Ser Asn Tyr Ser Cys Glu Leu Ser Met Val Leu Thr  
785 790 795 800

Gly Ala Ala Phe Phe His Lys Tyr Tyr Ala Tyr Leu Tyr Ser Tyr Val  
805 810 815

Met Pro Gln Ala Ile Arg Asp Met Val Asp Glu Tyr Ile Asn Cys Glu  
820 825 830

Asp Ile Ala Met Asn Phe Leu Val Ser His Ile Thr Arg Lys Pro Pro  
835 840 845

Ile Lys Val Thr Ser Arg Trp Thr Phe Arg Cys Pro Gly Cys Pro Gln  
850 855 860

Ala Leu Ser His Asp Asp Ser His Phe His Glu Arg His Lys Cys Ile  
865 870 875 880

Asn Phe Phe Val Lys Val Tyr Gly Tyr Met Pro Leu Leu Tyr Thr Gln  
885 890 895

Phe Arg Val Asp Ser Val Leu Phe Lys Thr Arg Leu Pro His Asp Lys  
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Thr Lys Cys Phe Lys Phe Ile  
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<212> PRT

<213> Homo sapiens

<400> 6

Met Cys Ala Ser Val Lys Tyr Asn Ile Arg Gly Pro Ala Leu Ile Pro  
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			20					25					30				
Val	Leu	Leu	Gly	Leu	Ile	Ala	Thr	Gly	Met	Phe	Gln	Phe	Trp	Pro	His		
		35					40					45					
Ser	Ile	Glu	Ser	Ser	Asn	Asp	Trp	Asn	Val	Glu	Lys	Arg	Ser	Ile	Arg		
	50					55					60						
Asp	Val	Pro	Val	Val	Arg	Leu	Pro	Ala	Asp	Ser	Pro	Ile	Pro	Glu	Arg		
	65				70					75					80		
Gly	Asp	Leu	Ser	Cys	Arg	Met	His	Thr	Cys	Phe	Asp	Val	Tyr	Arg	Cys		
				85					90					95			
Gly	Phe	Asn	Pro	Lys	Asn	Lys	Ile	Lys	Val	Tyr	Ile	Tyr	Ala	Leu	Lys		
			100					105					110				
Lys	Tyr	Val	Asp	Asp	Phe	Gly	Val	Ser	Val	Ser	Asn	Thr	Ile	Ser	Arg		
		115					120					125					
Glu	Tyr	Asn	Glu	Leu	Leu	Met	Ala	Ile	Ser	Asp	Ser	Asp	Tyr	Tyr	Thr		
	130					135					140						
Asp	Asp	Ile	Asn	Arg	Ala	Cys	Leu	Phe	Val	Pro	Ser	Ile	Asp	Val	Leu		
	145				150					155					160		
Asn	Gln	Asn	Thr	Leu	Arg	Ile	Lys	Glu	Thr	Ala	Gln	Ala	Met	Ala	Gln		
				165					170					175			
Leu	Ser	Arg	Trp	Asp	Arg	Gly	Thr	Asn	His	Leu	Leu	Phe	Asn	Met	Leu		
			180					185					190				
Pro	Gly	Gly	Pro	Pro	Asp	Tyr	Asn	Thr	Ala	Leu	Asp	Val	Pro	Arg	Asp		
		195					200					205					
Arg	Ala	Leu	Leu	Ala	Gly	Gly	Gly	Phe	Ser	Thr	Trp	Thr	Tyr	Arg	Gln		
	210					215					220						
Gly	Tyr	Asp	Val	Ser	Ile	Pro	Val	Tyr	Ser	Pro	Leu	Ser	Ala	Glu	Val		
	225				230					235				240			
Asp	Leu	Pro	Glu	Lys	Gly	Pro	Gly	Pro	Arg	Gln	Tyr	Phe	Leu	Leu	Ser		
				245					250					255			
Ser	Gln	Val	Gly	Leu	His	Pro	Glu	Tyr	Arg	Glu	Asp	Leu	Glu	Ala	Leu		
			260					265					270				
Gln	Val	Lys	His	Gly	Glu	Ser	Val	Leu	Val	Leu	Asp	Lys	Cys	Thr	Asn		
		275					280					285					
Leu	Ser	Glu	Gly	Val	Leu	Ser	Val	Arg	Lys	Arg	Cys	His	Lys	His	Gln		
	290					295					300						
Val	Phe	Asp	Tyr	Pro	Gln	Val	Leu	Gln	Glu	Ala	Thr	Phe	Cys	Val	Val		
	305				310					315					320		





Asn Cys Glu Asp Ile Ala Met Asn Phe Leu Val Ala Asn Val Thr Gly  
625 630 635 640

Lys Ala Val Ile Lys Val Thr Pro Arg Lys Lys Phe Lys Cys Pro Glu  
645 650 655

Cys Thr Ala Ile Asp Gly Leu Ser Leu Asp Gln Thr His Met Val Glu  
660 665 670

Arg Ser Glu Cys Ile Asn Lys Phe Ala Ser Val Phe Gly Thr Met Pro  
675 680 685

Leu Lys Val Val Glu His Arg Ala Asp Pro Val Leu Tyr Lys Asp Asp  
690 695 700

Phe Pro Glu Lys Leu Lys Ser Phe Pro Asn Ile Gly Ser Leu  
705 710 715

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Met Gln Ala Lys Lys Arg Tyr Phe Ile Leu Leu Ser Ala Gly Ser Cys  
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Leu Ala Leu Leu Phe Tyr Phe Gly Gly Leu Gln Phe Arg Ala Ser Arg  
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Ser His Ser Arg Arg Glu Glu His Ser Gly Arg Asn Gly Leu His His  
35 40 45

Pro Ser Pro Asp His Phe Trp Pro Arg Phe Pro Glu Pro Leu Arg Pro  
50 55 60

Phe Val Pro Trp Asp Gln Leu Glu Asn Glu Asp Ser Ser Val His Ile  
65 70 75 80

Ser Pro Arg Gln Lys Arg Asp Ala Asn Ser Ser Ile Tyr Lys Gly Lys  
85 90 95

Lys Cys Arg Met Glu Ser Cys Phe Asp Phe Thr Leu Cys Lys Lys Asn  
100 105 110

Gly Phe Lys Val Tyr Val Tyr Pro Gln Gln Lys Gly Glu Lys Ile Ala  
115 120 125

Glu Ser Tyr Gln Asn Ile Leu Ala Ala Ile Glu Gly Ser Arg Phe Tyr  
130 135 140

Thr Ser Asp Pro Ser Gln Ala Cys Leu Phe Val Leu Ser Leu Asp Thr  
145 150 155 160

Leu Asp Arg Asp Gln Leu Ser Pro Gln Tyr Val His Asn Leu Arg Ser  
165 170 175

Lys Val Gln Ser Leu His Leu Trp Asn Asn Gly Arg Asn His Leu Ile  
 180 185 190  
 Phe Asn Leu Tyr Ser Gly Thr Trp Pro Asp Tyr Thr Glu Asp Val Gly  
 195 200 205  
 Phe Asp Ile Gly Gln Ala Met Leu Ala Lys Ala Ser Ile Ser Thr Glu  
 210 215 220  
 Asn Phe Arg Pro Asn Phe Asp Val Ser Ile Pro Leu Phe Ser Lys Asp  
 225 230 235 240  
 His Pro Arg Thr Gly Gly Glu Arg Gly Phe Leu Lys Phe Asn Thr Ile  
 245 250 255  
 Pro Pro Leu Arg Lys Tyr Met Leu Val Phe Lys Gly Lys Arg Tyr Leu  
 260 265 270  
 Thr Gly Ile Gly Ser Asp Thr Arg Asn Ala Leu Tyr His Val His Asn  
 275 280 285  
 Gly Glu Asp Val Val Leu Leu Thr Thr Cys Lys His Gly Lys Asp Trp  
 290 295 300  
 Gln Lys His Lys Asp Ser Arg Cys Asp Arg Asp Asn Thr Glu Tyr Glu  
 305 310 315 320  
 Lys Tyr Asp Tyr Arg Glu Met Leu His Asn Ala Thr Phe Cys Leu Val  
 325 330 335  
 Pro Arg Gly Arg Arg Leu Gly Ser Phe Arg Phe Leu Glu Ala Leu Gln  
 340 345 350  
 Ala Ala Cys Val Pro Val Met Leu Ser Asn Gly Trp Glu Leu Pro Phe  
 355 360 365  
 Ser Glu Val Ile Asn Trp Asn Gln Ala Ala Val Ile Gly Asp Glu Arg  
 370 375 380  
 Leu Leu Leu Gln Ile Pro Ser Thr Ile Arg Ser Ile His Gln Asp Lys  
 385 390 395 400  
 Ile Leu Ala Leu Arg Gln Gln Thr Gln Phe Leu Trp Glu Ala Tyr Phe  
 405 410 415  
 Ser Ser Val Glu Lys Ile Val Leu Thr Thr Leu Glu Ile Ile Gln Asp  
 420 425 430  
 Arg Ile Phe Lys His Ile Ser Arg Asn Ser Leu Ile Trp Asn Lys His  
 435 440 445  
 Pro Gly Gly Leu Phe Val Leu Pro Gln Tyr Ser Ser Tyr Leu Gly Asp  
 450 455 460  
 Phe Pro Tyr Tyr Tyr Ala Asn Leu Gly Leu Lys Pro Pro Ser Lys Phe  
 465 470 475 480

Thr Ala Val Ile His Ala Val Thr Pro Leu Val Ser Gln Ser Gln Pro  
485 490 495

Val Leu Lys Leu Leu Val Ala Ala Ala Lys Ser Gln Tyr Cys Ala Gln  
500 505 510

Ile Ile Val Leu Trp Asn Cys Asp Lys Pro Leu Pro Ala Lys His Arg  
515 520 525

Trp Pro Ala Thr Ala Val Pro Val Val Val Ile Glu Gly Glu Ser Lys  
530 535 540

Val Met Ser Ser Arg Phe Leu Pro Tyr Asp Asn Ile Ile Thr Asp Ala  
545 550 555 560

Val Leu Ser Leu Asp Glu Asp Thr Val Leu Ser Thr Thr Glu Val Asp  
565 570 575

Phe Ala Phe Thr Val Trp Gln Ser Phe Pro Glu Arg Ile Val Gly Tyr  
580 585 590

Pro Ala Arg Ser His Phe Trp Asp Asn Ser Lys Glu Arg Trp Gly Tyr  
595 600 605

Thr Ser Lys Trp Thr Asn Asp Tyr Ser Met Val Leu Thr Gly Ala Ala  
610 615 620

Ile Tyr His Lys Tyr Tyr His Tyr Leu Tyr Ser His Tyr Leu Pro Ala  
625 630 635 640

Ser Leu Lys Asn Met Val Asp Gln Leu Ala Asn Cys Glu Asp Ile Leu  
645 650 655

Met Asn Phe Leu Val Ser Ala Val Thr Lys Leu Pro Pro Ile Lys Val  
660 665 670

Thr Gln Lys Lys Gln Tyr Lys Glu Thr Met Met Gly Gln Thr Ser Arg  
675 680 685

Ala Ser Arg Trp Ala Asp Pro Asp His Phe Ala Gln Arg Gln Ser Cys  
690 695 700

Met Asn Thr Phe Ala Ser Trp Phe Gly Tyr Met Pro Leu Ile His Ser  
705 710 715 720

Gln Met Arg Leu Asp Pro Val Leu Phe Lys Asp Gln Val Ser Ile Leu  
725 730 735

Arg Lys Lys Tyr Arg Asp Ile Glu Arg Leu  
740 745

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<400> 8

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Ser Trp Leu Leu Leu Val Leu Leu Gly Gly Phe Ser Leu Leu Arg Leu  
20 25 30

Ala Leu Pro Pro Arg Pro Arg Pro Gly Ala Ser Gln Gly Trp Pro Arg  
35 40 45

Trp Leu Asp Ala Glu Leu Leu Gln Ser Phe Ser Gln Pro Gly Glu Leu  
50 55 60

Pro Glu Asp Ala Val Ser Pro Pro Gln Ala Pro His Gly Gly Ser Cys  
65 70 75 80

Asn Trp Glu Ser Cys Phe Asp Thr Ser Lys Cys Arg Gly Asp Gly Leu  
85 90 95

Lys Val Phe Val Tyr Pro Ala Val Gly Thr Ile Ser Glu Thr His Arg  
100 105 110

Arg Ile Leu Ala Ser Ile Glu Gly Ser Arg Phe Tyr Thr Phe Ser Pro  
115 120 125

Ala Gly Ala Cys Leu Leu Leu Leu Leu Ser Leu Asp Ala Gln Thr Gly  
130 135 140

Glu Cys Ser Ser Met Pro Leu Gln Trp Asn Arg Gly Arg Asn His Leu  
145 150 155 160

Val Leu Arg Leu His Pro Ala Pro Cys Pro Arg Thr Phe Gln Leu Gly  
165 170 175

Gln Ala Met Val Ala Glu Ala Ser Pro Thr Val Asp Ser Phe Arg Pro  
180 185 190

Gly Phe Asp Val Ala Leu Pro Phe Leu Pro Glu Ala His Pro Leu Arg  
195 200 205

Gly Gly Ala Pro Gly Gln Leu Arg Gln His Ser Pro Gln Pro Gly Val  
210 215 220

Ala Leu Leu Ala Leu Glu Glu Glu Arg Gly Gly Trp Arg Thr Ala Asp  
225 230 235 240

Thr Gly Ser Ser Ala Cys Pro Trp Asp Gly Arg Cys Glu Gln Asp Pro  
245 250 255

Gly Pro Gly Gln Thr Gln Arg Gln Glu Thr Leu Pro Asn Ala Thr Phe  
260 265 270

Cys Leu Ile Ser Gly His Arg Pro Glu Ala Ala Ser Arg Phe Leu Gln  
275 280 285

Ala Leu Gln Ala Gly Cys Ile Pro Val Leu Leu Ser Pro Arg Trp Glu  
 290 295 300  
 Leu Pro Phe Ser Glu Val Ile Asp Trp Thr Lys Ala Ala Ile Val Ala  
 305 310 315 320  
 Asp Glu Arg Leu Pro Leu Gln Val Leu Ala Ala Leu Gln Glu Met Ser  
 325 330 335  
 Pro Ala Arg Val Leu Ala Leu Arg Gln Gln Thr Gln Phe Leu Trp Asp  
 340 345 350  
 Ala Tyr Phe Ser Ser Val Glu Lys Val Ile His Thr Thr Leu Glu Val  
 355 360 365  
 Ile Gln Asp Arg Ile Phe Gly Thr Ser Ala Asn Pro Ser Leu Leu Trp  
 370 375 380  
 Asn Ser Pro Pro Gly Ala Leu Leu Ala Leu Ser Thr Phe Ser Thr Ser  
 385 390 395 400  
 Pro Gln Asp Phe Pro Phe Tyr Tyr Leu Gln Gln Gly Ser Arg Pro Glu  
 405 410 415  
 Gly Arg Phe Ser Ala Leu Ile Trp Val Gly Pro Pro Gly Gln Pro Pro  
 420 425 430  
 Leu Lys Leu Ile Gln Ala Val Ala Gly Ser Gln His Cys Ala Gln Ile  
 435 440 445  
 Leu Val Leu Trp Ser Asn Glu Arg Pro Leu Pro Ser Arg Trp Pro Glu  
 450 455 460  
 Thr Ala Val Pro Leu Thr Val Ile Asp Gly His Arg Lys Val Ser Asp  
 465 470 475 480  
 Arg Phe Tyr Pro Tyr Ser Thr Ile Arg Thr Asp Ala Ile Leu Ser Leu  
 485 490 495  
 Asp Ala Arg Ser Ser Leu Ser Thr Ser Glu Val Asp Phe Ala Phe Leu  
 500 505 510  
 Val Trp Gln Ser Phe Pro Glu Arg Met Val Gly Phe Leu Thr Ser Ser  
 515 520 525  
 His Phe Trp Asp Glu Ala His Gly Gly Trp Gly Tyr Thr Ala Glu Arg  
 530 535 540  
 Thr Asn Glu Phe Ser Met Val Leu Thr Thr Ala Ala Phe Tyr His Arg  
 545 550 555 560  
 Tyr Tyr His Thr Leu Phe Thr His Ser Leu Pro Lys Ala Leu Arg Thr  
 565 570 575  
 Leu Ala Asp Glu Ala Pro Thr Cys Val Asp Val Leu Met Asn Phe Ile  
 580 585 590

Val Ala Ala Val Thr Lys Leu Pro Pro Ile Lys Val Pro Tyr Gly Lys  
595 600 605

Gln Arg Gln Glu Ala Ala Pro Leu Ala Pro Gly Gly Pro Gly Pro Arg  
610 615 620

Pro Lys Pro Pro Ala Pro Ala Pro Asp Cys Ile Asn Gln Ile Ala Ala  
625 630 635 640

Ala Phe Gly His Met Pro Leu Leu Ser Ser Arg Leu Arg Leu Asp Pro  
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Val Leu Phe Lys Asp Pro Val Ser Val Gln Arg Lys Lys Tyr Arg Ser  
660 665 670

Leu Glu Lys Pro  
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Arg Val Leu Arg Leu Ser Leu Val Val Ile Leu Val Leu Leu Val  
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Ala Gly Ala Leu Thr Ala Leu Leu Pro Ser Val Lys Glu Asp Lys Met  
35 40 45

Leu Met Leu Arg Arg Glu Ile Lys Ser Gln Gly Lys Ser Thr Met Asp  
50 55 60

Ser Phe Thr Leu Ile Met Gln Thr Tyr Asn Arg Thr Asp Leu Leu Leu  
65 70 75 80

Lys Leu Leu Asn His Tyr Gln Ala Val Pro Asn Leu His Lys Val Ile  
85 90 95

Val Val Trp Asn Asn Ile Gly Glu Lys Ala Pro Asp Glu Leu Trp Asn  
100 105 110

Ser Leu Gly Pro His Pro Ile Pro Val Ile Phe Lys Gln Gln Thr Ala  
115 120 125

Asn Arg Met Arg Asn Arg Leu Gln Val Phe Pro Glu Leu Glu Thr Asn  
130 135 140

Ala Val Leu Met Val Asp Asp Asp Thr Leu Ile Ser Thr Pro Asp Leu  
145 150 155 160

Val Phe Ala Phe Ser Val Trp Gln Gln Phe Pro Asp Gln Ile Val Gly  
165 170 175

Phe Val Pro Arg Lys His Val Ser Thr Ser Ser Gly Ile Tyr Ser Tyr  
 180 185 190

Gly Ser Phe Glu Met Gln Ala Pro Gly Ser Gly Asn Gly Asp Gln Tyr  
 195 200 205

Ser Met Val Leu Ile Gly Ala Ser Phe Phe Asn Ser Lys Tyr Leu Glu  
 210 215 220

Leu Phe Gln Arg Gln Pro Ala Ala Val His Ala Leu Ile Asp Asp Thr  
 225 230 235 240

Gln Asn Cys Asp Asp Ile Ala Met Asn Phe Ile Ile Ala Lys His Ile  
 245 250 255

Gly Lys Thr Ser Gly Ile Phe Val Lys Pro Val Asn Met Asp Asn Leu  
 260 265 270

Glu Lys Glu Thr Asn Ser Gly Tyr Ser Gly Met Trp His Arg Ala Glu  
 275 280 285

His Ala Leu Gln Arg Ser Tyr Cys Ile Asn Lys Leu Val Asn Ile Tyr  
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Asp Ser Met Pro Leu Arg Tyr Ser Asn Ile Met Ile Ser Gln Phe Gly  
 305 310 315 320

Phe Pro Tyr Ala Asn Tyr Lys Arg Lys Ile  
 325 330

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<211> 9

<212> PRT

<213> Influenza virus

<400> 10

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
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